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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/843,765	04/30/2001	Akihiro Sanda	Q63763	9192
7590	05/22/2006		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213				PRONE, JASON D
		ART UNIT	PAPER NUMBER	3724

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/843,765	SANDA ET AL.
	Examiner	Art Unit
	Jason Prone	3724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 March 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) Claim(s) 1-5, 7, 15 and 16 is/are allowed.
- 6) Claim(s) 6 and 17-20 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: Appendix A.

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities: The phrase "said irregularities having one of saw-tooth shape and undulating shape" should be replaced with "said irregularities having one of saw-tooth shape or undulating shape". It is clear from Figure 5 and 8 that the blade has either a saw tooth shape or an undulating shape but not both. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch et al. (3,788,180) in view of Takagi (6,033,057). See Appendix A for examiner added reference numerals. In regards to claim 6, Potsch et al. discloses the invention including a drum-shaped rotary blade (53), a disk shaped rotary blade (68), that the rotary blade has a cutting edge (Fig. 9), a first beveled surface facing the drum-shaped rotary blade and progressively spaced from the drum-shaped rotary blade toward the cutting edge (68'), and a second beveled surface facing the work piece and progressively spaced from the cutting edge away from the work piece (200).

However, Potsch et al. fail to disclose that the disk-shaped rotary blade has irregularities along a circumference of the blade, the irregularities have an irregularity

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quantity set to a value which ranges from $0.5\mu\text{m}$ to $5\mu\text{m}$, the irregularities have one of saw-tooth shaped and undulating shape, and the irregularity quantity being a distance from a bottom to a top of one of the irregularities.

Takagi teaches that it is old and well known that blades have irregularities in an undulating shape (Column 2, lines 27-28). It is old and well known that irregularities come in extremely small sizes. Its old and well known to have the surface as smooth as possible making the irregularities as small as possible therefore it would have been obvious to one skilled in the art to have made the irregularities within the claimed range. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided Potsch et al. with irregularities, as taught by Takagi, to provide the desired smoothness of the cutting apparatus.

4. Claims 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potsch et al. in view of Surina (6,205,898). See Appendix A for examiner added reference numerals. Potsch et al. discloses the same invention including a drum-shaped rotary blade (53), a disk shaped rotary blade (68), the rotary blade has a cutting edge (Fig. 9), a first beveled surface facing the drum-shaped rotary blade and progressively spaced from the drum-shaped rotary blade toward the cutting edge (68'), a second beveled surface facing the work piece and progressively spaced from the cutting edge away from the work piece (200), the drum-shaped rotary blade is disposed on a drum shaft (Fig. 3), and the disk-shaped rotary blade is disposed on a disk shaft (Fig. 3).

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However, Potsch et al. fail to disclose a means for transmitting driving force between the drum shaft and the disk shaft, the shaft and the disk shaft are operably connected to rotate in unison, and the means for transmitting a driving force comprises gears.

Surina teaches a means for transmitting driving force between the drum shaft and the disk shaft (20 and 22), the drum shaft and disk shaft are operably connected to rotate in unison through gears (Column 1 lines 50-55). Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided Potsch et al. with gears connecting the drum and drive shafts, as taught by Surina, to minimize the complexity of the apparatus by reducing the drive means from two to one.

Response to Arguments

5. Applicant's arguments with respect to claims 6 and 17-20 have been considered but are moot in view of the new ground(s) of rejection. Also, item 53, of Potsch et al. is clearly drum shaped as shown in Figures 2 and 3.

Allowable Subject Matter

6. Claims 1-5, 7, 15, and 16 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Prone whose telephone number is (571) 272-4513. The examiner can normally be reached on 7:30-5:00, Mon - (every other) Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer D. Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 12, 2006


Patent Examiner
Jason Prone
Art Unit 3724
T.C. 3700

Appendix A

